1. What do you see? How are these ARP tables built? Perform some **internet research** to help decipher the information on your ARP cache.

   The Arp Table is built by communicating with other devices on the network. Once it receives traffic on the network it then stores the IP-to-MAC address mapping so that it can communicate directly with the other devices. These entries have a limited lifetime and will be deleted if not refreshed by further traffic.

   After doing some research what I found was the following. The 192.168.0.xx Addresses are physical devices in my home. Things like my car, smart tv's, and phones. The 192.168.0.255 is the broadcast address for this subnet. The 224.0.0.XXX address are used by some devices as a multicast address for things like TV's, air play, and IGMP.

   The second interface is 172.27.160.1 are private addresses and belong to my home lab and virtual machines on my host system. The 172.27.175.255 is the broadcast address for that subnet. With again the 224.x.x.x and 239.x.x.x being the multicast traffic for local services.

   The third interface of 10.5.0.2 is the VPN tunnel on my pc. The 10.5.0.1 address is likely to be my gateway/ VPN server endpoint and the 10.5.0.2 address is my local client. The .255 again is the broadcast address and the others are again the services.

2. What class of IPv4 address are your devices using? (you can find these in the lesson videos)

   The VPN interface of 10.5.0.2 is Using a Class A address. This is not surprising as a VPN will likely have hundreds of thousands of customers.

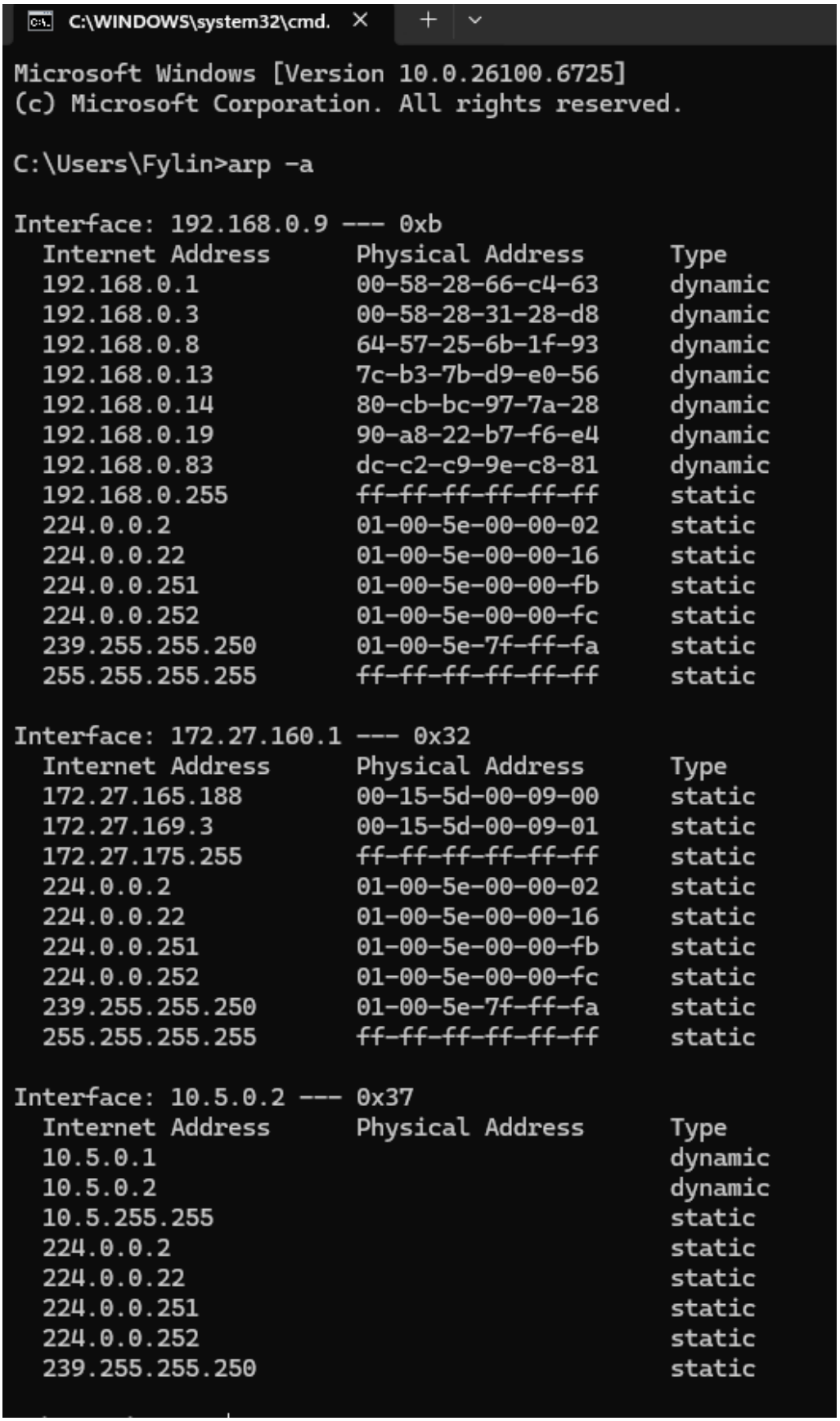
   The 172.27.x.x address are class B private addresses these are very commonly used for VM's and Hyper-V.

   The 192.168.0.x is a very common home network address and is a Class C address and is commonly used for home and small business networks.

3. Are the number of devices you see in the ARP cache what you expected? Do some research and come up with a few reasons why devices could be missing from the ARP cache.

   The number of entries is roughly what I expected. This is considering that the windows ARP table is only cached for around 2 mins and I did this first thing in the

morning before everyone works up. It would likely look different in the middle of the day if more of the local devices were in use then more would show up in the table.


C:\WINDOWS\system32\cmd.
Microsoft Windows [Version 10.0.26100.6725]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Fylin>arp -a
Interface: 192.168.0.9 --- 0xb
Internet Address Physical Address Type
192.168.0.1 00-58-28-66-c4-63 dynamic
192.168.0.3 00-58-28-31-28-d8 dynamic
192.168.0.8 64-57-25-6b-1f-93 dynamic
192.168.0.13 7c-b3-7b-d9-e0-56 dynamic
192.168.0.14 80-cb-bc-97-7a-28 dynamic
192.168.0.19 90-a8-22-b7-f6-e4 dynamic
192.168.0.83 dc-c2-c9-9e-c8-81 dynamic
192.168.0.255 ff-ff-ff-ff-ff-ff static
224.0.0.2 01-00-5e-00-00-02 static
224.0.0.22 01-00-5e-00-00-16 static
224.0.0.251 01-00-5e-00-00-fb static
224.0.0.252 01-00-5e-00-00-fc static
239.255.255.250 01-00-5e-7f-ff-fa static
255.255.255.255 ff-ff-ff-ff-ff-ff static
Interface: 172.27.160.1 --- 0x32
Internet Address Physical Address Type
172.27.165.188 00-15-5d-00-09-00 static
172.27.169.3 00-15-5d-00-09-01 static
172.27.175.255 ff-ff-ff-ff-ff-ff static
224.0.0.2 01-00-5e-00-00-02 static
224.0.0.22 01-00-5e-00-00-16 static
224.0.0.251 01-00-5e-00-00-fb static
224.0.0.252 01-00-5e-00-00-fc static
239.255.255.250 01-00-5e-7f-ff-fa static
255.255.255.255 ff-ff-ff-ff-ff-ff static
Interface: 10.5.0.2 --- 0x37
Internet Address Physical Address Type
10.5.0.1 dynamic
10.5.0.2 dynamic
10.5.255.255 static
224.0.0.2 static
224.0.0.22 static
224.0.0.251 static
224.0.0.252 static
239.255.255.250 static